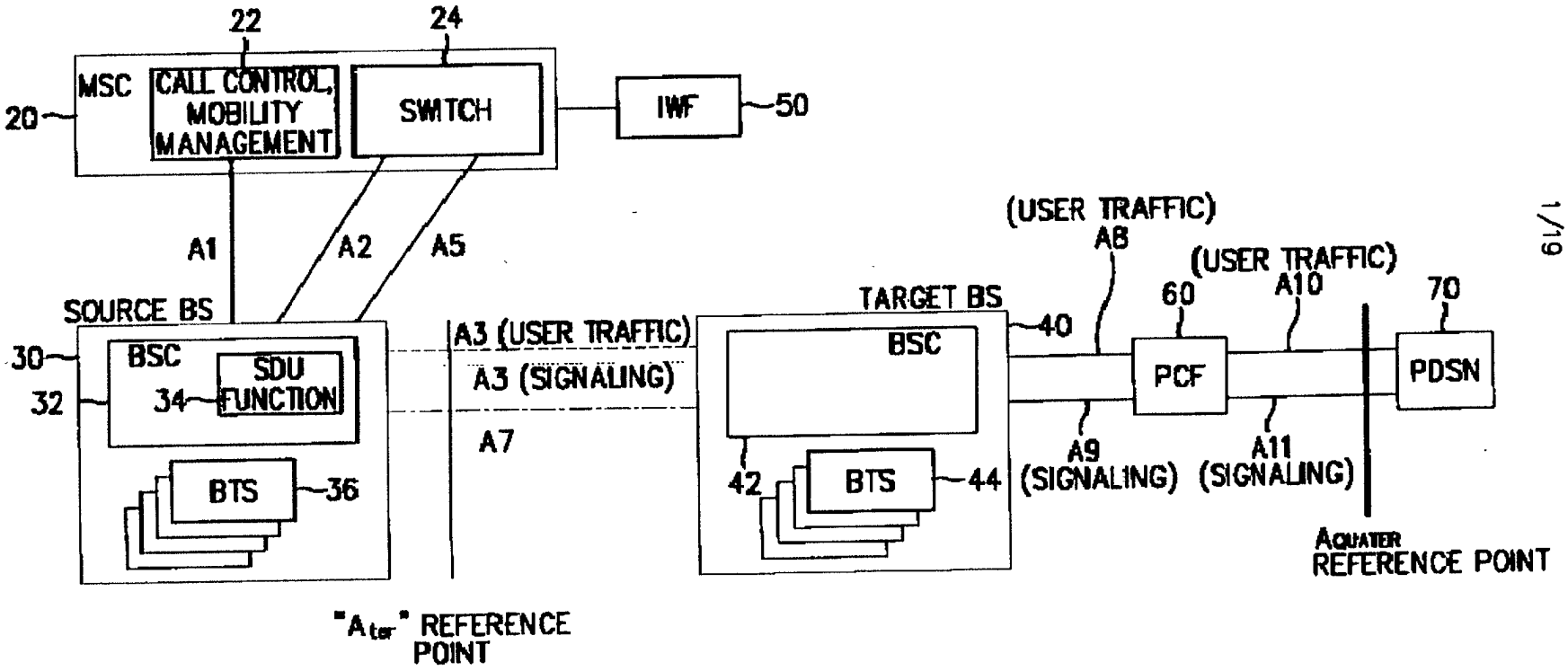
FIG. 1


22
24
MSC
CALL CONTROL, MOBILITY MANAGEMENT
SWITCH
IWF
20
50
A1
A2
A5
SOURCE BS
30
BSC
SDU FUNCTION
32
34
BTS
36
A3 (USER TRAFFIC)
A3 (SIGNALING)
A7
"Ater" REFERENCE POINT
TARGET BS
BSC
40
42
BTS
44
(USER TRAFFIC)
A8
(USER TRAFFIC)
60
A10
70
PCF
PDSN
A9
(SIGNALING)
A11
(SIGNALING)
AQUATER REFERENCE POINT

1/19

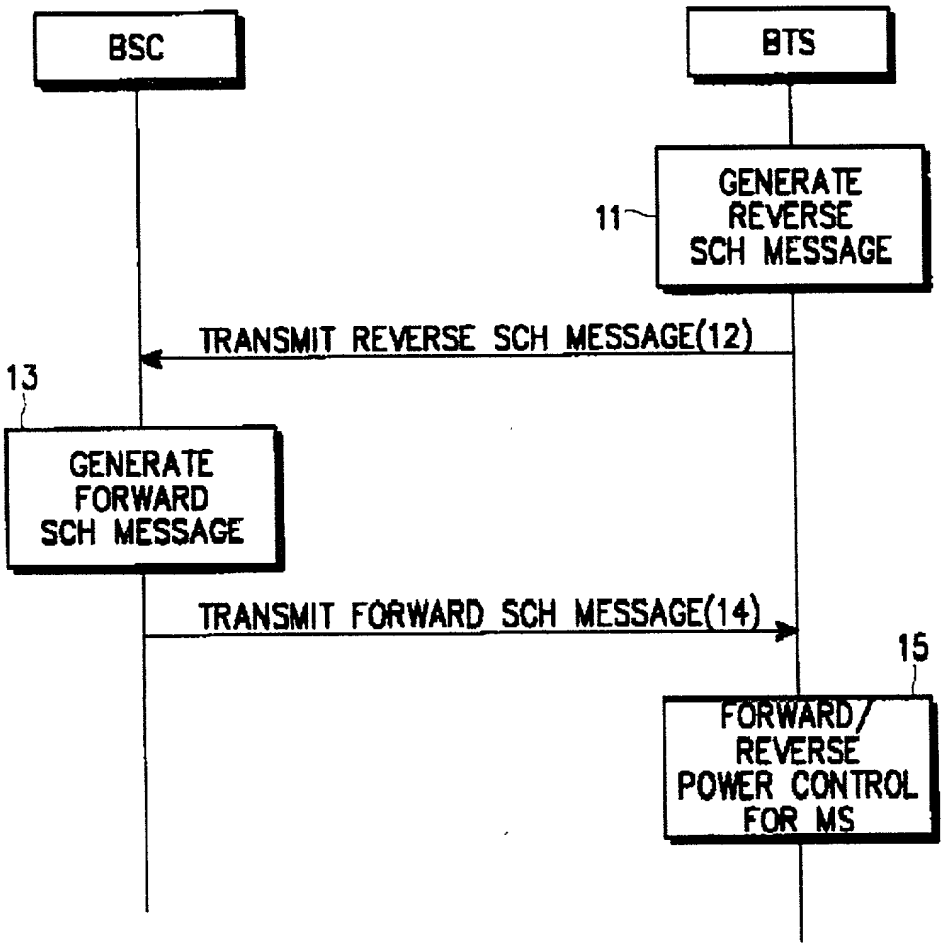

BSC
BTS
GENERATE REVERSE SCH MESSAGE
11
TRANSMIT REVERSE SCH MESSAGE(12)
13
GENERATE FORWARD SCH MESSAGE
TRANSMIT FORWARD SCH MESSAGE(14)
15
FORWARD/ REVERSE POWER CONTROL FOR MS

FIG. 2

FIG. 3

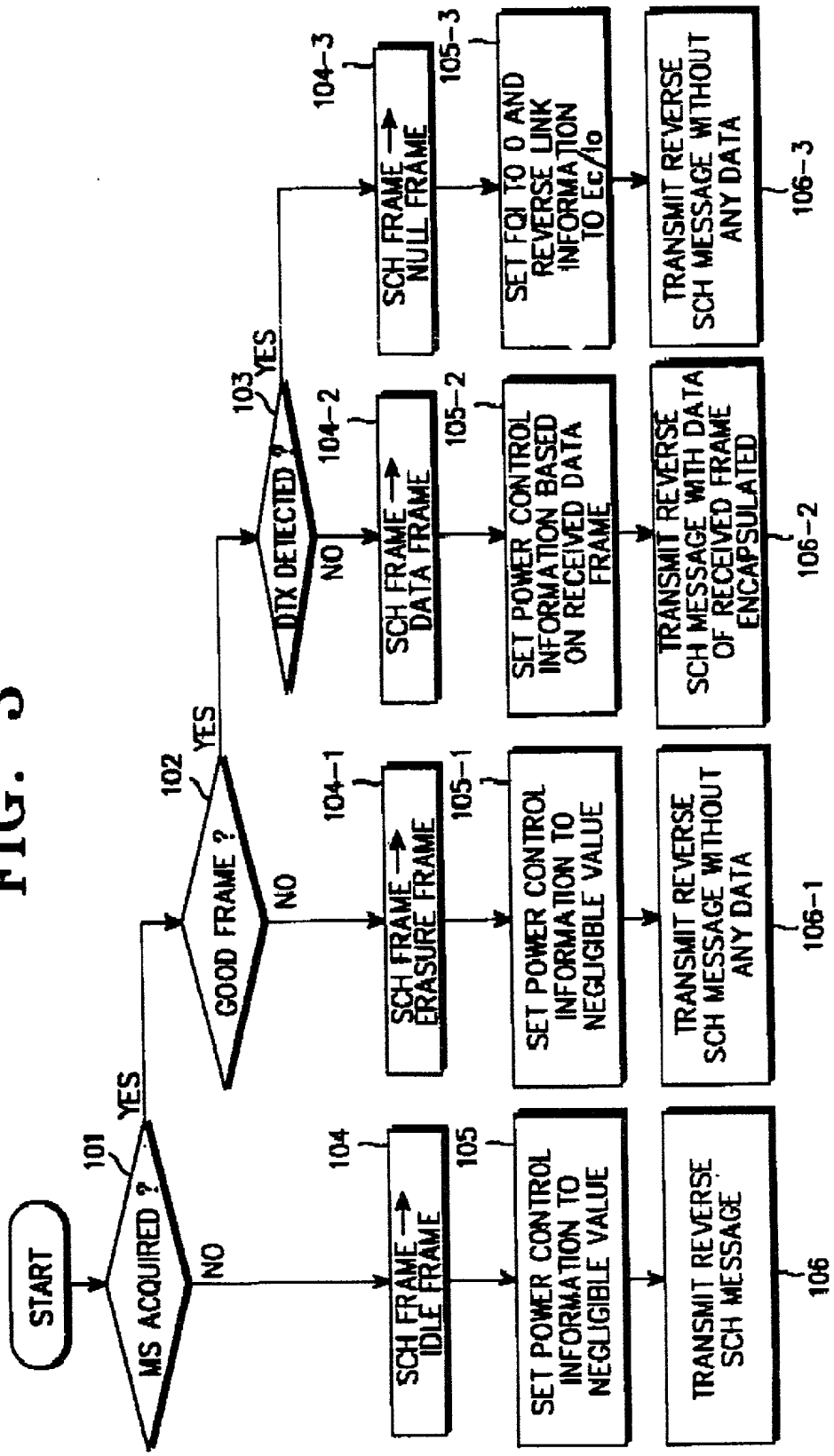

START
MS ACQUIRED ?
101
YES
NO
GOOD FRAME ?
102
YES
NO
DTX DETECTED ?
103
YES
NO
SCH FRAME → IDLE FRAME
104
SCH FRAME → ERASURE FRAME
104-1
SCH FRAME → DATA FRAME
104-2
SCH FRAME → NULL FRAME
104-3
SET POWER CONTROL INFORMATION TO NEGLIGIBLE VALUE
105
SET POWER CONTROL INFORMATION TO NEGLIGIBLE VALUE
105-1
SET POWER CONTROL INFORMATION BASED ON RECEIVED DATA FRAME
105-2
SET FQI TO 0 AND REVERSE LINK INFORMATION TO Ec/Io
105-3
TRANSMIT REVERSE SCH MESSAGE
106
TRANSMIT REVERSE SCH MESSAGE WITHOUT ANY DATA
106-1
TRANSMIT REVERSE SCH MESSAGE WITH DATA OF RECEIVED FRAME ENCAPSULATED
106-2
TRANSMIT REVERSE SCH MESSAGE WITHOUT ANY DATA
106-3

FIG. 4A

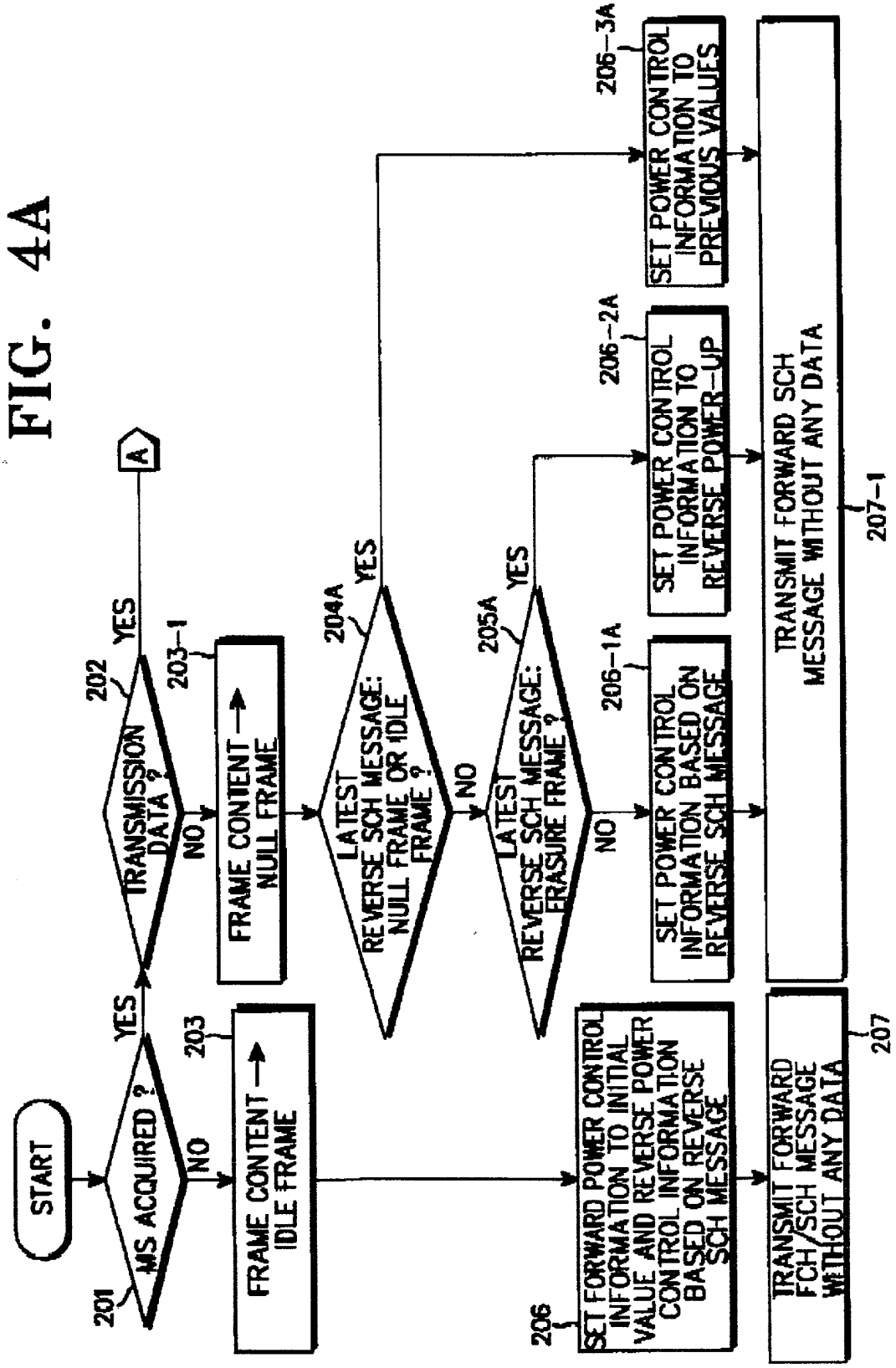

START
201
MS ACQUIRED ?
YES
NO
202
TRANSMISSION DATA ?
YES
A
NO
203
FRAME CONTENT → IDLE FRAME
203-1
FRAME CONTENT → NULL FRAME
204A
LATEST REVERSE SCH MESSAGE: NULL FRAME OR IDLE FRAME ?
YES
NO
205A
LATEST REVERSE SCH MESSAGE: ERASURE FRAME ?
YES
NO
206
SET FORWARD POWER CONTROL INFORMATION TO INITIAL VALUE AND REVERSE POWER CONTROL INFORMATION BASED ON REVERSE SCH MESSAGE
206-1A
SET POWER CONTROL INFORMATION BASED ON REVERSE SCH MESSAGE
206-2A
SET POWER CONTROL INFORMATION TO REVERSE POWER-UP
206-3A
SET POWER CONTROL INFORMATION TO PREVIOUS VALUES
207
TRANSMIT FORWARD FCH/SCH MESSAGE WITHOUT ANY DATA
207-1
TRANSMIT FORWARD SCH MESSAGE WITHOUT ANY DATA

FIG. 4B

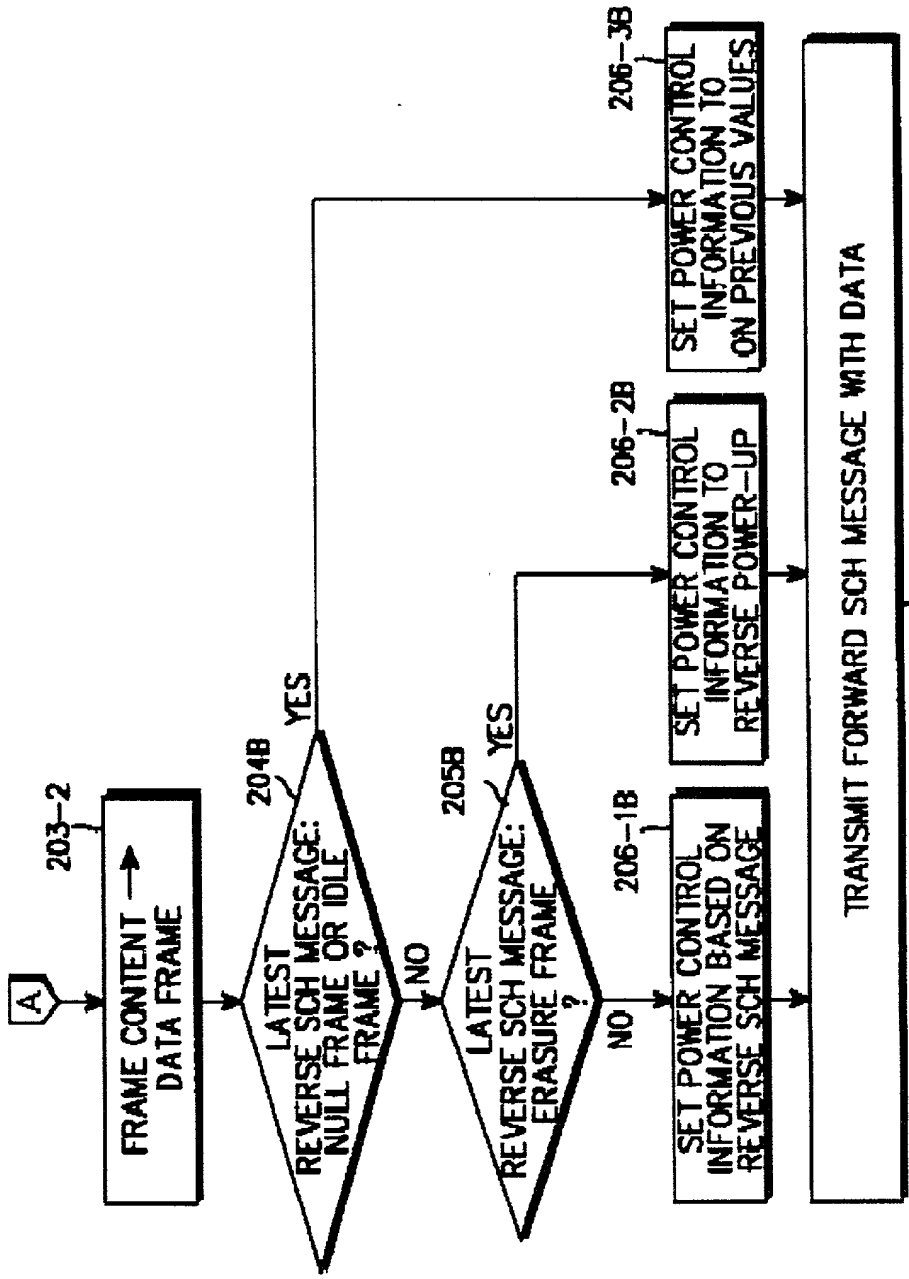

A
203-2
FRAME CONTENT → DATA FRAME
204B
LATEST REVERSE SCH MESSAGE: NULL FRAME OR IDLE FRAME ?
YES
NO
205B
LATEST REVERSE SCH MESSAGE: ERASURE FRAME ?
YES
NO
206-1B
SET POWER CONTROL INFORMATION BASED ON REVERSE SCH MESSAGE
206-2B
SET POWER CONTROL INFORMATION TO REVERSE POWER-UP
206-3B
SET POWER CONTROL INFORMATION TO ON PREVIOUS VALUES
TRANSMIT FORWARD SCH MESSAGE WITH DATA
207-2

FIG. 5

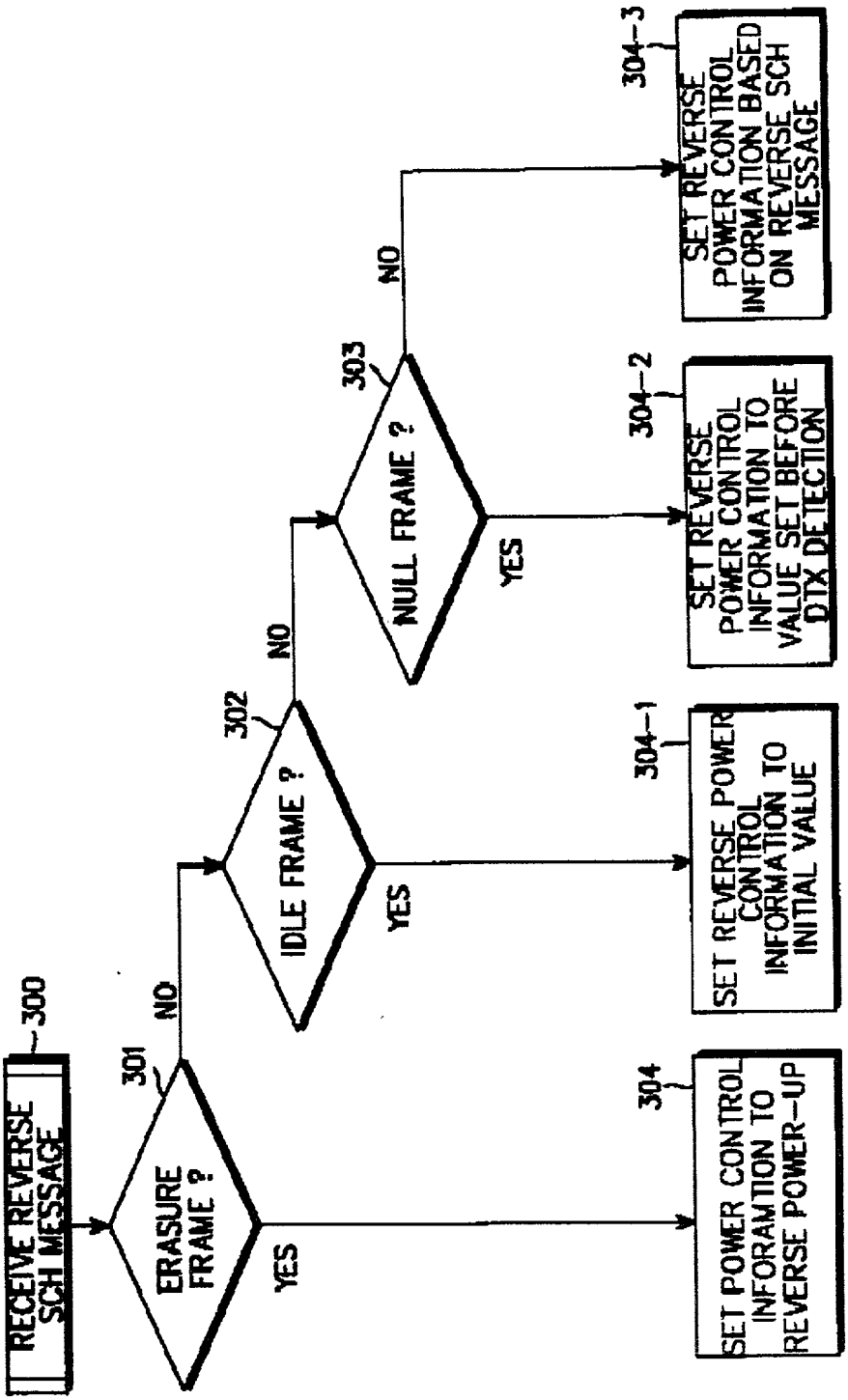

RECEIVE REVERSE SCH MESSAGE
300
ERASURE FRAME ?
301
YES
NO
SET POWER CONTROL INFORAMTION TO REVERSE POWER-UP
304
IDLE FRAME ?
302
YES
NO
SET REVERSE POWER CONTROL INFORMATION TO INITIAL VALUE
304-1
NULL FRAME ?
303
YES
NO
SET REVERSE POWER CONTROL INFORMATION TO VALUE SET BEFORE DTX DETECTION
304-2
SET REVERSE POWER CONTROL INFORMATION BASED ON REVERSE SCH MESSAGE
304-3

FIG. 6

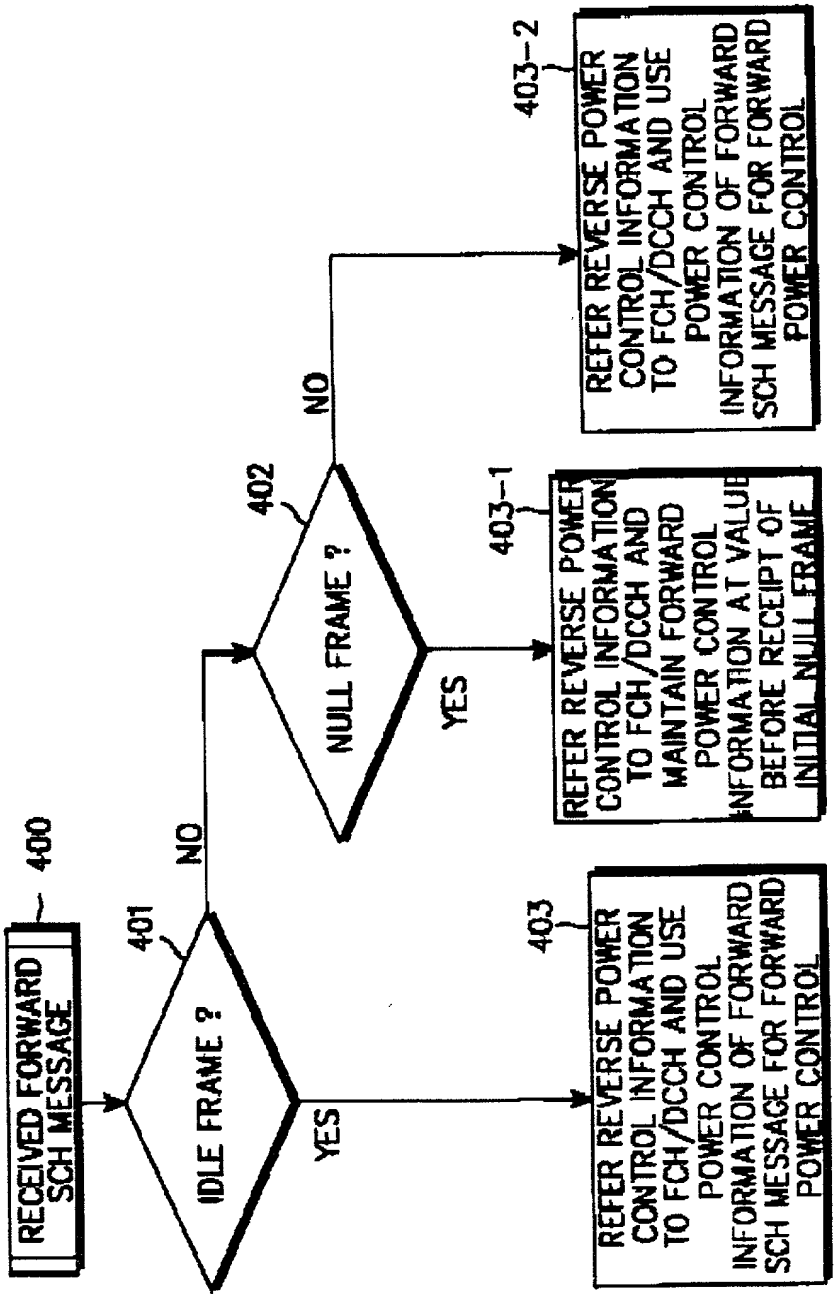
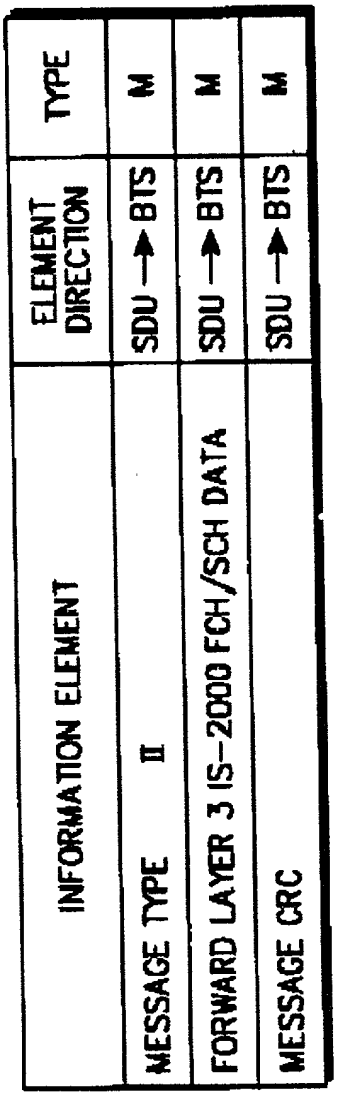

400
RECEIVED FORWARD SCH MESSAGE
401
IDLE FRAME ?
YES
NO
403
REFER REVERSE POWER CONTROL INFORMATION TO FCH/DCCH AND USE POWER CONTROL INFORMATION OF FORWARD SCH MESSAGE FOR FORWARD POWER CONTROL
402
NULL FRAME ?
YES
NO
403-1
REFER REVERSE POWER CONTROL INFORMATION TO FCH/DCCH AND MAINTAIN FORWARD POWER CONTROL INFORMATION AT VALUE BEFORE RECEIPT OF INITIAL NULL FRAME
403-2
REFER REVERSE POWER CONTROL INFORMATION TO FCH/DCCH AND USE POWER CONTROL INFORMATION OF FORWARD SCH MESSAGE FOR FORWARD POWER CONTROL

FIG. 7



INFORMATION ELEMENT	ELEMENT DIRECTION	TYPE
MESSAGE TYPE II	SDU → BTS	M
FORWARD LAYER 3 IS-2000 FCH/SCH DATA	SDU → BTS	M
MESSAGE CRC	SDU → BTS	M

RECEIVED 05/25/2005

FIG. 8

7	6	5	4	3	2	1	0	Octet
MESSAGE TYPE II = [0EH]								1
FORWARD LAYER 3 IS-2000 FCH/SCH DATA {1:								
FPC: SLC = [0001 TO 0110]				FSN = [0000 TO 1111]				1
FPC: GR = [00H – FFH]								2
IS-2000 FRAME CONTENT = [00H, 32H–39H, 3D–43H, 7FH]								3
								4
(MSB)								5
FORWARD LINK INFORMATION = <VARIABLE>								
							(LSB)	n
} FORWARD LAYER 3 IS-2000 SCH DATA								
(MSB)	MESSAGE CRC = [0000H–FFFFH]							1
							(LSB)	2

FIG. 9

INFORMATION ELEMENT	ELEMENT DIRECTION	TYPE
MESSAGE TYPE II	SDU ← BTS	M
REVERSE LAYER 3 IS-2000 SCH DATA	SDU ← BTS	M
MESSAGE CRC	SDU ← BTS	M

FIG. 10

7	6	5	4	3	2	1	0	Octet
MESSAGE TYPE II = [11H]								1
REVERSE LAYER 3 IS-2000 SCH DATA {1:								
SOFT HANDOFF LEG # =[0000 – 1111]				FSN = [0000 to 1111]				1
CRC =[0,1]	REVERSE LINK QUALITY = [000 0000 111 1111]							2
SCALING =[00 11]	PACKET ARRIVAL TIME ERROR =[00 0000 11 1111]							3
IS-2000 FRAME CONTENT = [00H, 32H, 39H, 3DH, 43H, 7EH, 7FH]								5
(MSB)								6
REVERSE LINK INFORMATION = <VARIABLE>								
							(LSB)	n
} REVERSE LAYER 3 IS-2000 SCH DATA								
(MSB)	MESSAGE CRC = [0000H–FFFFH]							1
							(LSB)	2

FIG. 11

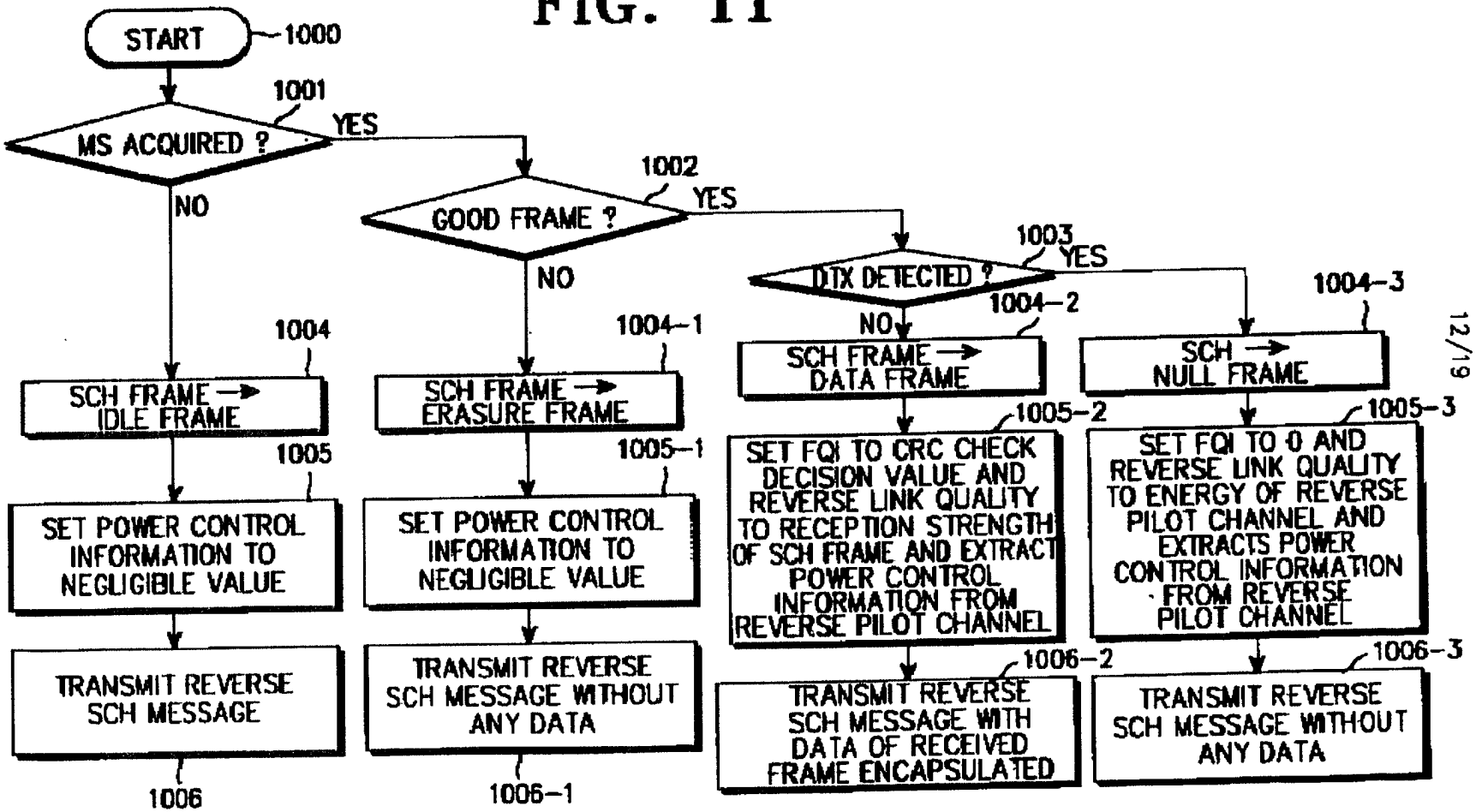

START
1000
1001
MS ACQUIRED ?
YES
NO
1002
GOOD FRAME ?
YES
NO
1003
DTX DETECTED ?
YES
NO
1004
SCH FRAME → IDLE FRAME
1004-1
SCH FRAME → ERASURE FRAME
1004-2
SCH FRAME → DATA FRAME
1004-3
SCH → NULL FRAME
1005
SET POWER CONTROL INFORMATION TO NEGLIGIBLE VALUE
1005-1
SET POWER CONTROL INFORMATION TO NEGLIGIBLE VALUE
1005-2
SET FQI TO CRC CHECK DECISION VALUE AND REVERSE LINK QUALITY TO RECEPTION STRENGTH OF SCH FRAME AND EXTRACT POWER CONTROL INFORMATION FROM REVERSE PILOT CHANNEL
1005-3
SET FQI TO 0 AND REVERSE LINK QUALITY TO ENERGY OF REVERSE PILOT CHANNEL AND EXTRACTS POWER CONTROL INFORMATION FROM REVERSE PILOT CHANNEL
1006
TRANSMIT REVERSE SCH MESSAGE
1006-1
TRANSMIT REVERSE SCH MESSAGE WITHOUT ANY DATA
1006-2
TRANSMIT REVERSE SCH MESSAGE WITH DATA OF RECEIVED FRAME ENCAPSULATED
1006-3
TRANSMIT REVERSE SCH MESSAGE WITHOUT ANY DATA

FIG. 12

INFORMATION ELEMENT	ELEMENT DIRECTION	TYPE
MESSAGE TYPE II	SDU ← BTS	M
REVERSE LAYER 3 IS-2000 FCH/SCH DATA	SDU ← BTS	M
MESSAGE CRC	SDU ← BTS	M

FIG. 13

7	6	5	4	3	2	1	0	Octet
MESSAGE TYPE II = [OEH]								1
REVERSE LAYER 3 IS-2000 FCH/SCH DATA {1:								
SOFT HANDOFF LEG # =[0000 – 1111]				FSN = [0000 to 1111]				1
FQI =[0,1]	REVERSE LINK QUALITY = [000 0000 111 1111]							2
SCALING =[00 11]	PACKET ARRIVAL TIME ERROR =[00 0000 11 1111]							3
RESERVED							=[0,1] EIB	5
IS-2000 FRAME CONTENT = [00H, 32H, 39H, 3DH, 43H, 7EH, 7FH]								4
(MSB)								
REVERSE LINK INFORMATION = <VARIABLE>								
							(LSB)	n
} REVERSE LAYER 3 IS-2000 SCH DATA								
(MSB)	MESSAGE CRC = [0000H–FFFFH]							1
							(LSB)	2

FIG. 14A

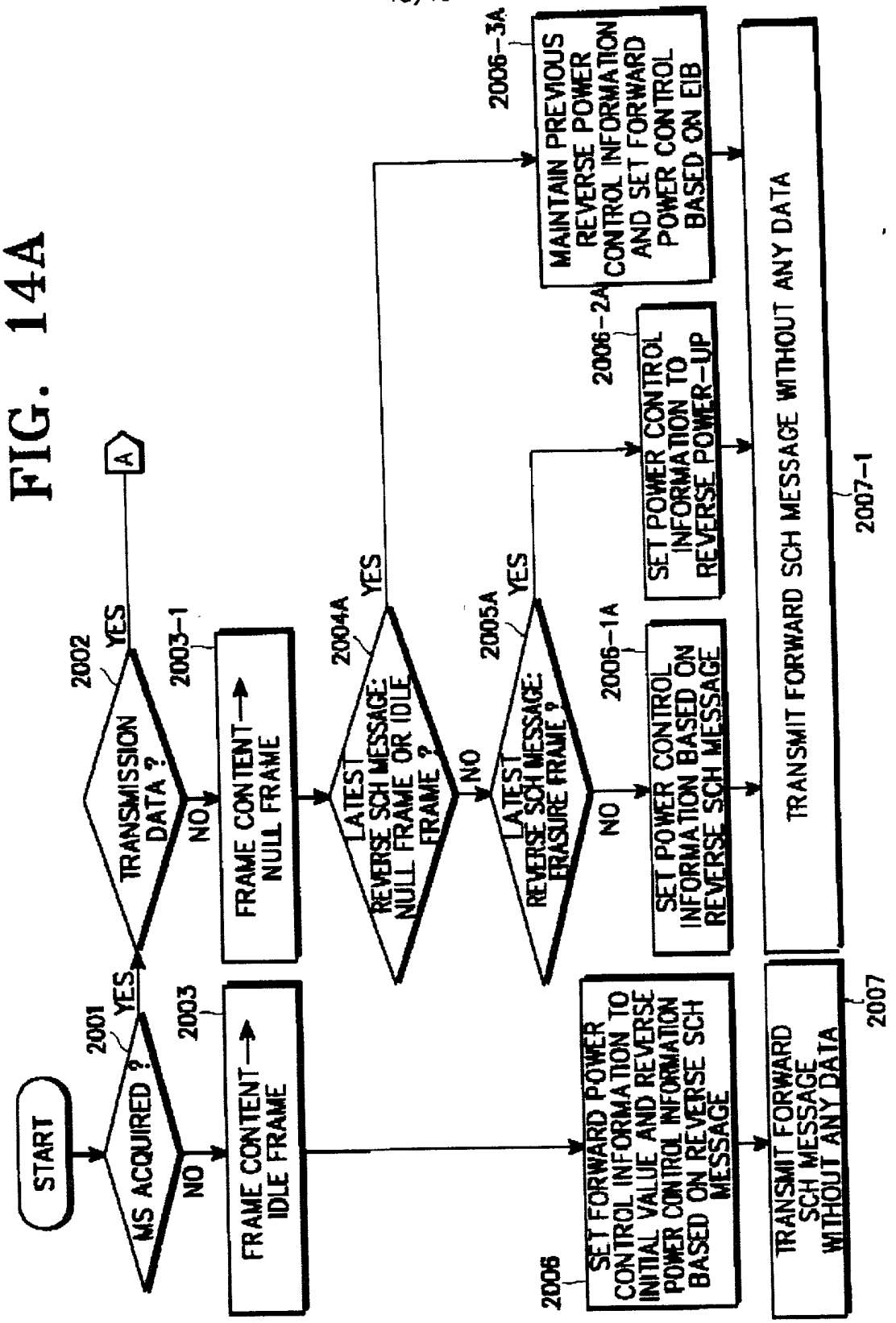

START
MS ACQUIRED ?
2001
YES
NO
FRAME CONTENT → IDLE FRAME
2003
TRANSMISSION DATA ?
2002
YES
A
NO
FRAME CONTENT → NULL FRAME
2003-1
LATEST REVERSE SCH MESSAGE: NULL FRAME OR IDLE FRAME ?
2004A
YES
NO
LATEST REVERSE SCH MESSAGE: ERASURE FRAME ?
2005A
YES
NO
MAINTAIN PREVIOUS REVERSE POWER CONTROL INFORMATION AND SET FORWARD POWER CONTROL BASED ON EIB
2006-3A
SET POWER CONTROL INFORMATION TO REVERSE POWER-UP
2006-2A
SET POWER CONTROL INFORMATION BASED ON REVERSE SCH MESSAGE
2006-1A
SET FORWARD POWER CONTROL INFORMATION TO INITIAL VALUE AND REVERSE POWER CONTROL INFORMATION BASED ON REVERSE SCH MESSAGE
2006
TRANSMIT FORWARD SCH MESSAGE WITHOUT ANY DATA
2007-1
TRANSMIT FORWARD SCH MESSAGE WITHOUT ANY DATA
2007

FIG. 14B

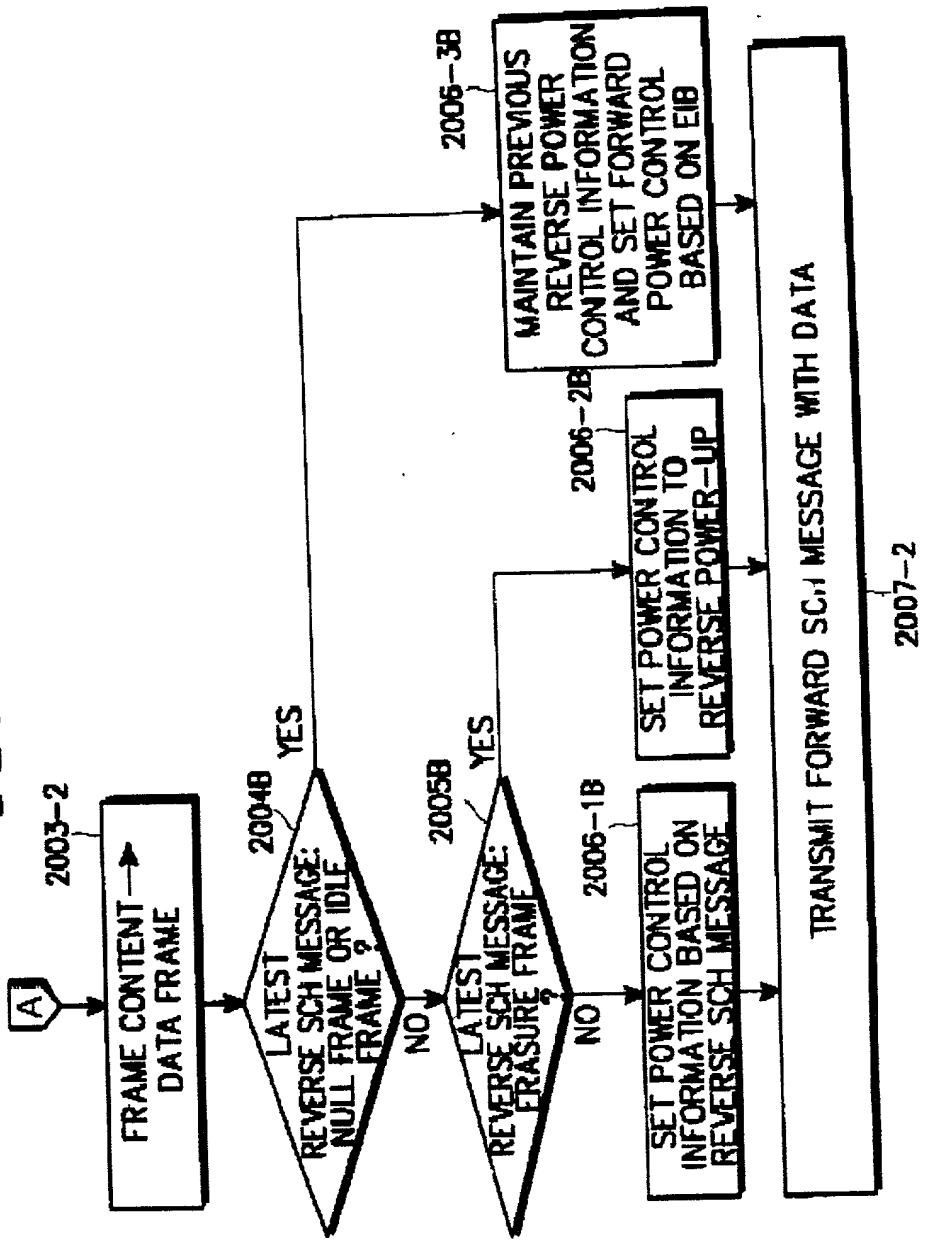

A
2003-2
FRAME CONTENT → DATA FRAME
2004B
LATEST REVERSE SCH MESSAGE: NULL FRAME OR IDLE FRAME ?
YES
NO
2005B
LATEST REVERSE SCH MESSAGE: ERASURE FRAME ?
YES
NO
2006-3B
MAINTAIN PREVIOUS REVERSE POWER CONTROL INFORMATION AND SET FORWARD POWER CONTROL BASED ON EIB
2006-2B
SET POWER CONTROL INFORMATION TO REVERSE POWER-UP
2006-1B
SET POWER CONTROL INFORMATION BASED ON REVERSE SCH MESSAGE
TRANSMIT FORWARD SCH MESSAGE WITH DATA
2007-2

FIG. 15

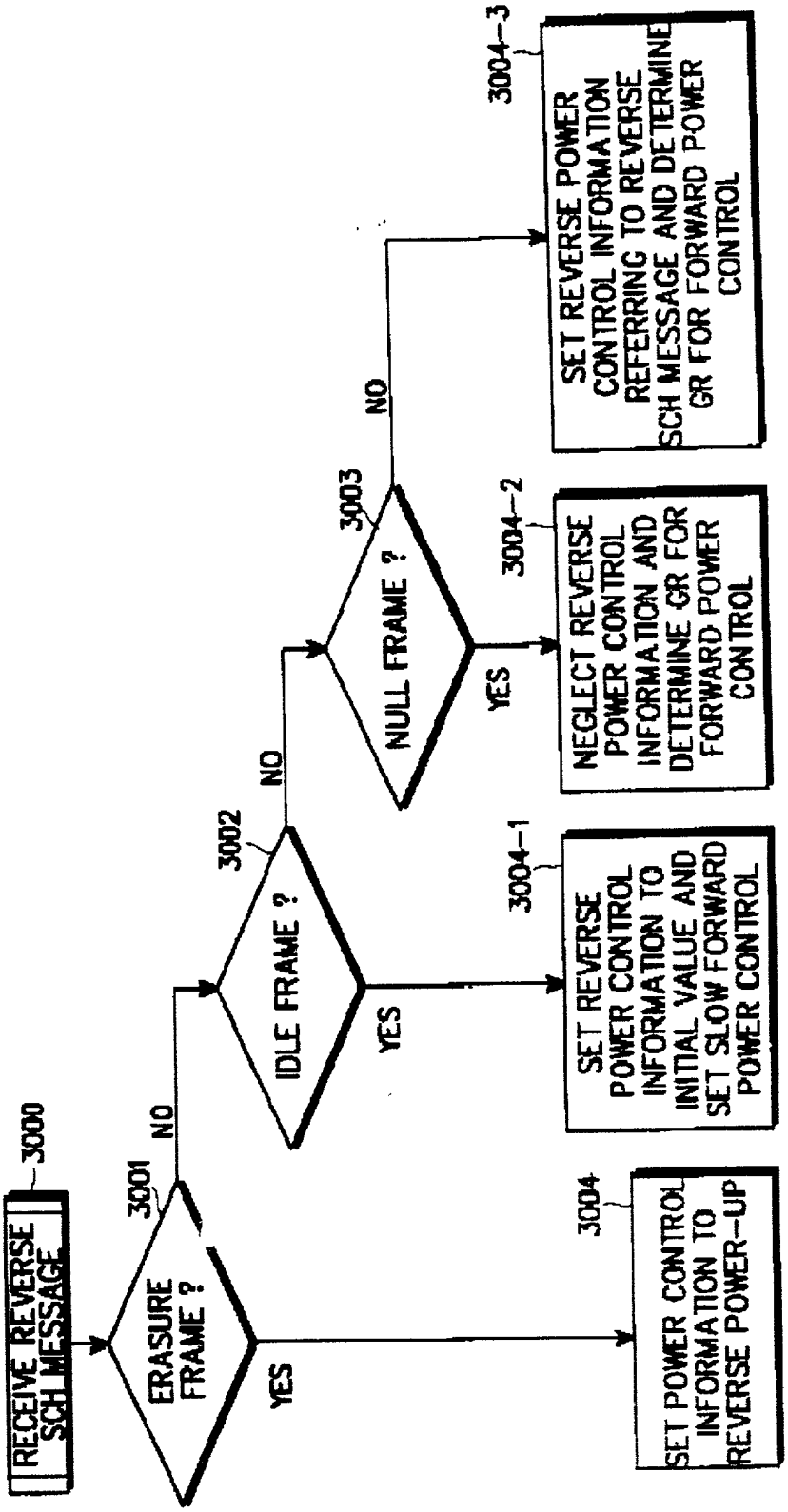

RECEIVE REVERSE SCH MESSAGE
3000
ERASURE FRAME ?
3001
YES
NO
SET POWER CONTROL INFORMATION TO REVERSE POWER-UP
3004
IDLE FRAME ?
3002
YES
NO
SET REVERSE POWER CONTROL INFORMATION TO INITIAL VALUE AND SET SLOW FORWARD POWER CONTROL
3004-1
NULL FRAME ?
3003
YES
NO
NEGLECT REVERSE POWER CONTROL INFORMATION AND DETERMINE GR FOR FORWARD POWER CONTROL
3004-2
SET REVERSE POWER CONTROL INFORMATION REFERRING TO REVERSE SCH MESSAGE AND DETERMINE GR FOR FORWARD POWER CONTROL
3004-3

FIG. 16

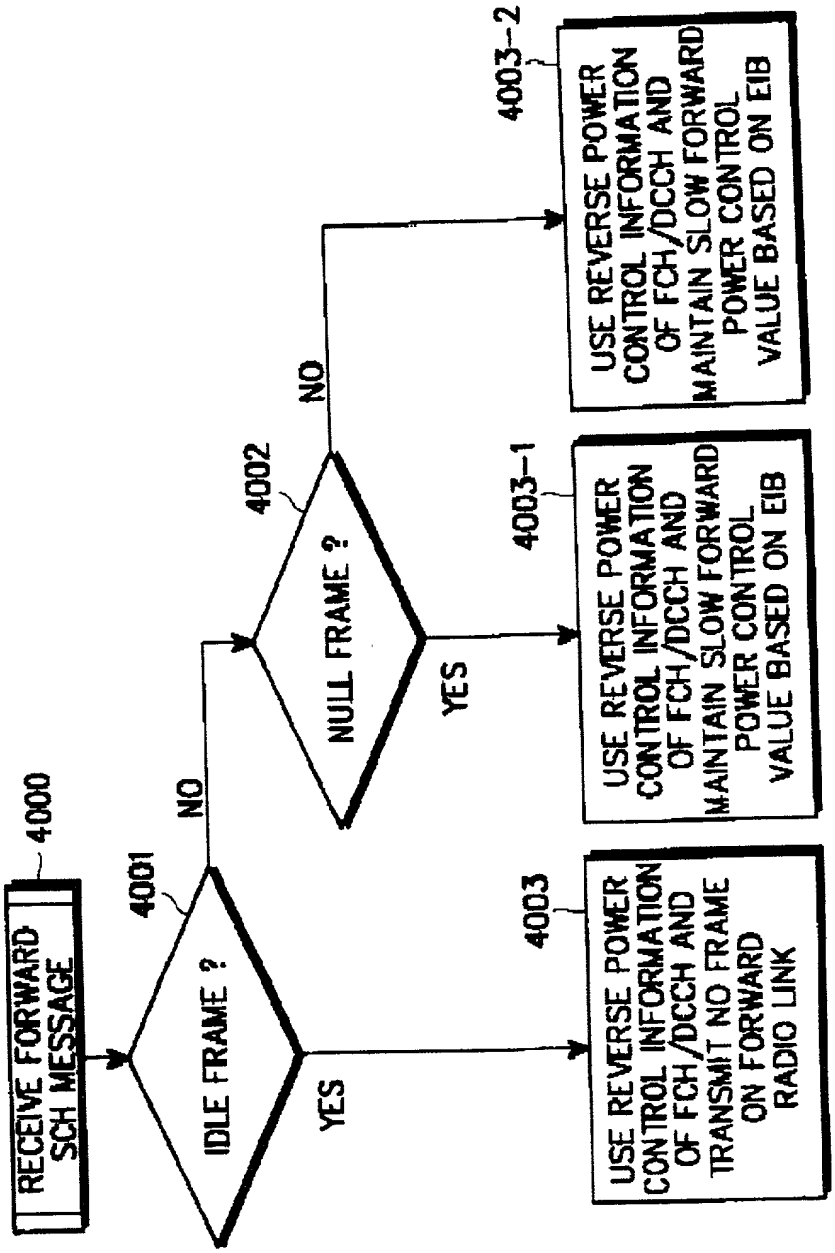
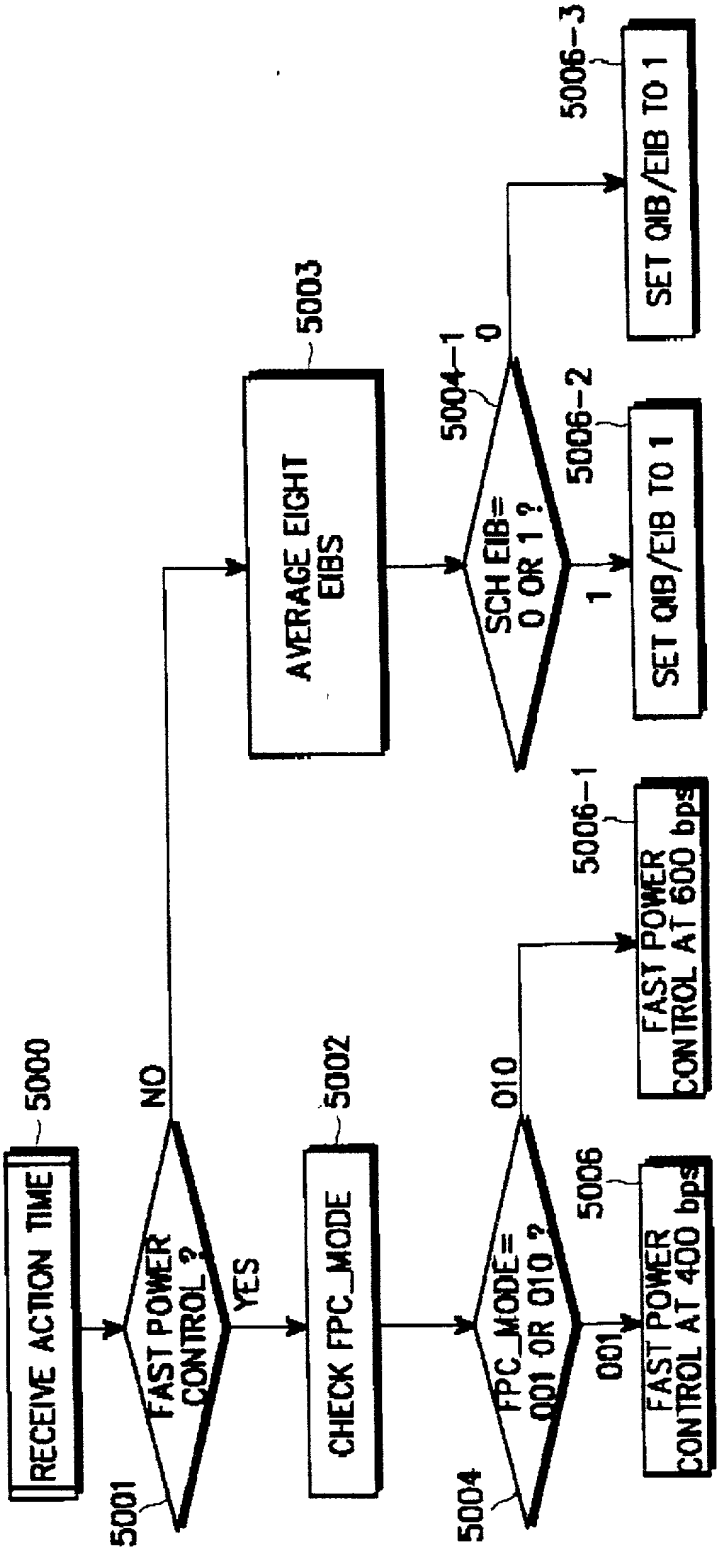

RECEIVE FORWARD SCH MESSAGE
4000
IDLE FRAME ?
4001
YES
NO
NULL FRAME ?
4002
YES
NO
USE REVERSE POWER CONTROL INFORMATION OF FCH/DCCH AND TRANSMIT NO FRAME ON FORWARD RADIO LINK
4003
USE REVERSE POWER CONTROL INFORMATION OF FCH/DCCH AND MAINTAIN SLOW FORWARD POWER CONTROL VALUE BASED ON EIB
4003-1
USE REVERSE POWER CONTROL INFORMATION OF FCH/DCCH AND MAINTAIN SLOW FORWARD POWER CONTROL VALUE BASED ON EIB
4003-2

FIG. 17


RECEIVE ACTION TIME
5000
FAST POWER CONTROL ?
5001
NO
YES
CHECK FPC_MODE
5002
AVERAGE EIGHT EIBS
5003
FPC_MODE= 001 OR 010 ?
5004
010
001
FAST POWER CONTROL AT 600 bps
5006-1
FAST POWER CONTROL AT 400 bps
5006
SCH EIB= 0 OR 1 ?
5004-1
0
1
SET QIB/EIB TO 1
5006-2
SET QIB/EIB TO 1
5006-3